

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS
PATENT OF THE UNITED STATES IS:

1. A multilayer plastic composite, comprising a sequence
of layers of at least two incompatible thermoplastic plastics,
5 A and B, wherein:

said sequence of layers alternates between A and B; a
layer of plastic B is discontinuous at regular intervals
to form gaps in said layer of B; and said gaps in said B
layer of B are filled in with plastic A.

10 2. The multilayer plastic composite of Claim 1, wherein
said layer of plastic B is inserted as unidirectional columns
in said plastic A.

15 3. The multilayer plastic composite of Claim 1, wherein
said plastic B has a greater coefficient of thermal expansion
than said plastic A.

4. The multilayer plastic composite of Claim 1, wherein
said plastic A is amorphous, and said plastic B is amorphous,
semi-crystalline, or crystalline.

20 5. The multilayer plastic composite of Claim 1, wherein
said layer of B comprises segments and the cross-sectional
width of said segments of said layer of plastic B vary
periodically.

25 6. A method for producing a multilayer plastic composite
comprising a sequence of layers of at least two incompatible
thermoplastic plastics, A and B, wherein said sequence of
layers alternates between A and B, a layer of plastic B is

discontinuous at regular intervals to form gaps in said layer of plastic B, and said gaps in said layer of B are filled in with plastic A, said method comprising coextruding plastic A and plastic B through a die comprising a pair of parallel exit
5 slits and a plurality of exit ports located between said pair of parallel exit slits, said plurality of exit ports being evenly spaced along a line parallel to said pair of exit slits, such that plastic A is extruded through said pair of parallel exit slits and said plastic B is extruded through
10 said plurality of exit ports.

7. The method of Claim 6, wherein said plastic B has a greater coefficient of thermal expansion than said plastic A.

8. The method of Claim 6, wherein said plastic A is amorphous, and said plastic B is amorphous, semi-crystalline,
15 or crystalline.

9. An extrusion die, comprising a pair of parallel exit slits and a plurality of exit ports located between said pair of parallel exit slits and evenly spaced along a line parallel to said pair of parallel exit slits.